



Legislator Alert

To inform and educate our Legislators about important

Behavioral Health Issues

February, 2013

Why Do Treatment Professionals Oppose Marijuana Use?

An Evidence-Based Review and Summary of the
Effects of Cannabis Use on Important Brain Functions

Cannabis use impairs cognitive [brain/learning]-functions on a number of levels—from basic motor coordination which is often seen in drivers who are under the influence of marijuana to higher level functions termed executive functions.

Individuals with cannabis related executive function impairment have trouble learning and applying the skills required for daily living such as the ability to pay attention/concentrate, make decisions, control impulses, maintain appropriate behavioral inhibitions and access working memory or the ability to hold and manipulate information after a short delay.

Aspects of Executive Functioning Impaired by Cannabis Use

↓	Attention/ Concentration	↓	Inhibitions
↓	Decision-Making	↑	Risk-Taking
↑	Impulsivity	↓	Reaction Time
↓	Working Memory		

One in ten recreational or occasional light users of marijuana will become dependent upon it and meet diagnostic criteria for addiction. Heavy users who use daily over a period of more than three months are generally addicted to the substance and will experience significant cognitive impairment. Medical marijuana users generally fall into the category of heavy users. Thus, in states where marijuana is legalized, addiction rates for this drug are generally higher than in states without such legislation.

Thanks to the neuroimaging technology of the nineties, we have been able to understand addiction as a brain disease in which the brain is changed as a result of the use of mood altering substances such as marijuana. We now also understand that the effects of various drugs may differ in the brain.

We have long understood the impact of mood-altering substances on motor coordination such as driving, however, now we have the science to understand the impact of this substance on higher brain functions or what we call Executive Functioning. We also know that the brain itself is an organ that is not fully developed until around age 22-24. While it is developing, it is particularly vulnerable to addiction—in other words it is easily changed and trained depending upon what it is exposed to.

Adolescents who start smoking marijuana between the ages of 14-22 years, but who have stopped by age 22, have significantly more cognitive problems than their non-using peers at age 27.

Professionals who work with cannabis-using adolescents are very familiar with the a-motivational syndrome that they exhibit with regular use. **These youth simply stop caring about tasks and actions that are important to their long-term development such as school, planning for the future, familial relationships etc.**

These young people become emotionally and intellectually stunted or delayed from the effects of regular marijuana use, and these impairments may last a very

long time even after the usage has stopped. It is also notable that the acute effects of cannabis on executive function is stronger in less experienced users than those who have established drug tolerance [addiction].

In this former group, acute cannabis use in young people has been found to impair planning, decision-making, and tasks related to information processing. **Thus, it appears that any cannabis use in young people is detrimental to brain development and essential learning.**



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